

**Virginia City Hybrid Energy Center**  
**Response to Data Request**  
**Bruce Buckheit, Member, Virginia Air Pollution Control Board**

**Question (Page No. 12 and 13)**

An issue can arise where inlet loadings to a pollution control system are so low that the system can no longer achieve the percentage removal levels that might be expected at higher loads. I suspect that the dry scrubber might not be able to achieve 95% efficiency in this application, and if this is the case the permit should reflect this fact. These issues may be resolved by reviewing existing documentation maintained either by Dominion or the system vendor concerning the design and performance of the CFB itself and of the dry scrubber system. In particular, those portions of the procurement documentation concerning three narrow points may be sufficient to resolve the issue: (1) the design of the atomizer system (are rotary atomizers employed?); (2) the anticipated SO<sub>2</sub> inlet loading to the SDA; and (3) the overall SO<sub>2</sub> system performance (a) requested in the RFB;(b) set out in the contract; and (c) any guaranteed performance for the system.

**Response:**

- 1) The dry scrubber system employs rotary atomizers.
- 2) The anticipated SO<sub>2</sub> inlet loading to the SDA depends on the amount of ash and sulfur in the fuel. For high sulfur (1.8%), the inlet loading to the SDA is 2401.6 lbs/hr. For high ash, the inlet loading to the SDA is 1273.86 lb/hr. For the performance coal case with average sulfur (1%), the inlet loading to the SDA is 1137.23 lb/hr.
- 3) The overall SO<sub>2</sub> system performance requested in the RFB is 98%. The boiler vendor provides SO<sub>2</sub> guarantees on a 3-hr average basis at the stack and the estimated removal would be close to 98% (80% in the boiler and 90% in the SDA).
- 4) The guaranteed SO<sub>2</sub> in our contract is 0.12 lb/MMBtu based on 98% removal from 50%-100% load range.